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Claims

1. A filter device (10), particularly for use with an agricultural sprayer, comprising

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a casing (20) with a bottom end (24) and an upper open end (23), a liquid inlet (27) and a liquid outlet (25), at least said liquid inlet (27) being arranged at said bottom end (24),

10 a lid (60) for releasable covering said casing (20) at said upper end (23),

a valve structure (30) arranged at said bottom end (24) and being movable between a first position wherein said liquid inlet (27) is open and a second position wherein said liquid inlet (27) is blocked,

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a filter element (100) including a mesh-like filtering medium (F) and being releasably arranged within said casing (20), for filtering liquid flowing from said liquid inlet (27) to said liquid outlet (25),

20 said filter element (100) being between said valve structure (30) and said lid (60).

2. A filter device (10) according to claim 1, including seals (102, 106) for sealing said filter element (100) against said valve structure (30) and against
25 said lid (60), respectively.

3. A filter device (10) according to claim 1 or 2, said liquid outlet (25) being arranged at said bottom end (24) of said casing (20).

4. A filter device (10) according to claim 3, said valve structure (30) being configured to block said liquid outlet (25) in said second position of said valve structure (30).
- 5 5. A filter device (10) according to claims 1 or 2, said lid (60) being releasably connected to said filter element (100) and said filter element (100) being connected to said valve structure (30).
- 10 6. A filter device (10) according to claim 1 or 2, said filter element (100) having a lower end (103) and an upper end (101) and including an essentially rigid elongated structure (115, 120) supporting said mesh-like filtering medium (F), said filter element (100) being essentially tubular and including an internal axial flow passage wherein said liquid flows, said filter device (10) including an annular space (S) between said filter element (100) and said
- 15 casing (20).
7. A filter device (10) according to claim 1 or 2, said filter element (100) being connected to said lid (60) such that said filter element (100) is removed when said lid (60) is removed.
- 20 8. A filter device (10), particularly for use with an agricultural sprayer, comprising
- a casing (20) with a bottom end (24) and an upper open end (23), a liquid
- 25 inlet (27) and a liquid outlet (25), at least said liquid inlet (27) being arranged at said bottom end (24),
- a lid (60) for releasable covering said casing (20) at said upper end (23),

a valve structure (30) arranged at said bottom end (24) and being movable between a first position wherein said liquid inlet (27) is open and a second position wherein said liquid inlet (27) is blocked,

- 5 a filter element (100) including a mesh-like filtering medium (F) and being releasably arranged within said casing (20), for filtering liquid flowing from said liquid inlet (27) to said liquid outlet (25),

- 10 said filter element (100) being between said valve structure (30) and said lid (60),

wherein manipulation of said lid (60) causes movement of said valve structure (30) between said first position and said second position.

- 15 9. A filter device according to claim 8, and including a coupling whereby said lid (60) is mechanically coupled to said valve structure (30) such that release of said lid (60) from said casing (20) moves said valve structure (30) between said first position and said second position.

- 20 10. A filter device (10) according to claim 8 or 9, including seals (102, 106) for sealing said filter element (100) against said valve structure (30) and against said lid (60), respectively.

- 25 11. A filter device (10) according to claim 8 or 9, said liquid outlet (25) being arranged at said bottom end (24) of said casing (20).

12. A filter device (10) according to claim 11, said valve structure (30) being configured to block said liquid outlet (25) in said second position of said valve structure (30).

13. A filter device (10) according to claim 8 or 9, said filter element (100) being releasably coupled to said lid (60) and/or said valve structure (30).

14. A filter device (10) according to claim 8 or 9, said filter element (100)
5 having a lower end (103) and an upper end (101) and including an essentially rigid elongated structure (115, 120) supporting said mesh-like filtering medium (F), said filter element (100) including an internal axial flow passage wherein said liquid flows.

10 15. A filter device (10) according to claim 14, said filter element (100) being essentially tubular, said filter device (10) including an annular space (S) between said filter element (100) and said casing (20).

15 16. A filter device (10), particularly for use with an agricultural sprayer, comprising

a casing (20) with a bottom end (24) and an upper open end (23), a liquid inlet (27) and a liquid outlet (25), at least said liquid inlet (27) being arranged at said bottom end (24),

20 a lid (60) for releasable covering said casing (20) at said upper end (23),

a valve structure (30) arranged at said bottom end (24) and being movable between a first position wherein said liquid inlet (27) is open and a second
25 position wherein said liquid inlet (27) is blocked,

a filter element (100) including a mesh-like filtering medium (F) and being releasably arranged within said casing (20), for filtering liquid flowing from said liquid inlet (27) to said liquid outlet (25),

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said filter element (100) being between said valve structure (30) and said lid (60),

5 said valve structure (30) being rotatable about an axis (2) extending between said upper end (23) and said bottom end (24), between said first position and said second position of said valve structure (30),

said lid (60) being rotatable about said axis (2),

10 and a coupling whereby said lid (60) is coupled to said valve structure (30) such that rotational movement of said lid (60) about said axis (2) imparts a rotation of said valve structure (30) about said axis (2) between said first position and said second position.

15 17. A filter device (10) according to claim 16, including seals (102, 106) for sealing said filter element (100) against said valve structure (30) and against said lid (60), respectively.

20 18. A filter device (10) according to claims 16 or 17, said liquid outlet (25) being arranged at said bottom end (24) of said casing (20).

19. A filter device (10) according to claim 18, said valve structure (30) being configured to block said liquid outlet (25) in said second position of said valve structure (30).

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20. A filter device (10) according to claims 16 or 17, said lid (60) being adapted to engage and disengage said casing (20) through said rotation of said lid (60) about said axis (2).

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21. A filter device (10) according to claims 16 or 17, said lid (60) being coupled to said filter element (100) and said filter element (100) being coupled to said valve structure (30) to thereby define said coupling.

- 5 22. A filter device (10) according to claim 21, said filter element (100) being releasably coupled to said lid (60) and/or said valve structure (30).

23. A filter device (10) according to claims 16 or 17, said filter element (100) having a lower end (103) and an upper end (101) and including an essentially
10 rigid elongated structure (115, 120) supporting said mesh-like filtering medium (F), said filter element (100) including an internal axial flow passage wherein said liquid flows.

24. A filter device (10) according to claim 23, said filter element (100) being
15 essentially tubular, said filter device (10) including an annular space (S) between said filter element (100) and said casing (20).

25. A filter device according to claim 23 or 24, said valve structure (30) including a chamber (X) having an entry port (45) and communicating in said
20 first position of said valve structure (30) with said liquid inlet (27) and said internal passage of said filter element (100).

26. A filter device according to claims 24 and 25, said valve structure (30) including a second chamber (Y) having an exit port (40) and communicating
25 in said first position of said valve structure (30) with said liquid outlet (25) and with said space (S).

27. A filter device according to claim 1, said filter element (100) including a
30 valve (110) at a bottom end (103) thereof, said valve (110) being adapted to close upon release of said filter element (100) from said casing (20).

28. A filter device according to claim 8, said filter element (100) including a valve (110) at a bottom end (103) thereof, said valve (110) being adapted to close upon release of said filter element (100) from said casing (20).

- 5 29. A filter device according to claim 16, said filter element (100) including a valve (110) at a bottom end (103) thereof, said valve (110) being adapted to close upon release of said filter element (100) from said casing (20).